

PUDDLE STOPPER'S HANDBOOK



LIBRARY
USE
ONLY

TD
495
.E27
2006
IGSL

A GUIDE TO BASIC HOME PLUMBING

TD
495
E27
2106

Contents

Introduction.....	3
Where the water goes—Understanding plumbing	4-5
Finding fast relief—Quick fixes	6-7
Getting a “handle” on water emergencies.....	8-9
Cold comfort—Protection from the cold.....	10
Looking for Leaks.....	11-22
• Where to start—Making easy leak checks	12
• Finding and fixing toilet leaks	13
• What to do—Simple repairs	14
• Plunger-ball leaks	16
• Solving flapper-valve & handle problems	17
• Ballcock leaks	17-19
• Household plumbing diagram	20-21
• While the top is off	22
Fixing Faucets	23-26
• Compression faucets.....	24
• Washerless • non-compression	25
• Tub and shower faucets.....	25
• Irrigation system trouble-shooting	26
Staying in Hot Water	27-29
• Heater maintenance	27
• Simple changes in habits save hot water and energy ..	29
Maintaining Water Quality	30-34
• From the source	30
• What’s in the water?—Quality is the watchword.....	30
• Do you need a home filter system?.....	31
• Water quality problems	32
• Low water pressure problems	33-34
An Emergency Water Supply	35
Appendix—See the tools for simple repairs.....	36-37
Water Conservation Tips	38
References	39
Emergency Numbers	Back Cover



Are you kept awake at night by the drip, drip, drip of a leaky faucet? Does your toilet whine and moan like a lost puppy? Are you at the mercy of your plumbing?

Then this booklet may help. Although East Bay MUD's responsibility ends at the water meter, we're still concerned about what happens to our water once it reaches you. Knowing something about how your home plumbing system works and how to maintain it may help you enjoy our product a little more—and may even save money on your water bill.

A set of basic tools and the tips in this booklet will help you make small plumbing repairs. This booklet also will help you "troubleshoot" minor problems that could save you a costly plumbing call, so take a look before calling for help.



WHERE THE WATER GOES

The drawing on pages 20 and 21 illustrates the two types of plumbing systems in your home.

One system, shown in blue, supplies fresh water from EBMUD. From EBMUD's distribution line in the street, water flows through a meter which measures your water use. The meter is set in a meter box, which usually is located near the curb in front of your house. Water flows from the meter through the main house line to fixtures such as sinks, tubs and toilets.

Part of your water supply is directed through the water heater, which supplies hot water to fixtures through separate piping.

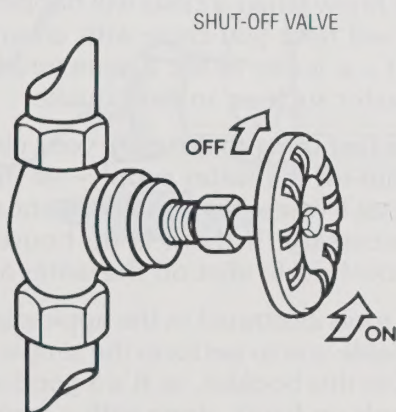
The other plumbing system in your home—completely separate from the fresh water supply—carries wastewater away to sanitary sewers, and vents harmful sewer gases. It is known as the drain-waste-vent (DWV) system, and is shown in gray in the drawing. Fixtures are connected to both water supply and DWV systems.

You may have other plumbing outside your home such as an irrigation system, a well, or a swimming pool. Although this booklet deals mainly with indoor plumbing, keep these outdoor uses in mind when checking for leaks.

You should know how to turn off the water supply at fixtures and at the main supply line to the house. To shut off water to sinks and toilets, look for valves located underneath the fixture. On a water heater, look for the valve located on the cold water supply line (it will be cool to the touch) where it enters the top of the heater. The main supply line to the house usually has a shut-off valve located near where the line enters the building. On older homes, the valve may be located under the house.

Most valves close with a clockwise turn. Make sure they are in working order, and get them fixed if they are not.

Always turn water off before attempting any plumbing repairs. This may sound elementary, but if you forget, you will have a real mess.





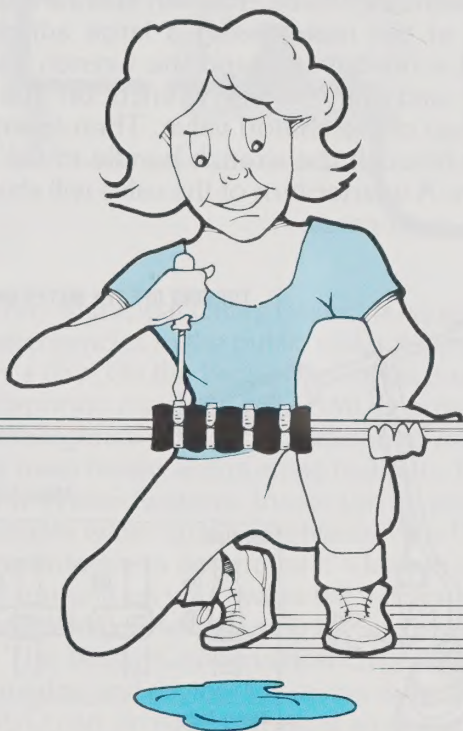
FINDING FAST RELIEF

You never know when a crisis will happen, but being prepared will help you cope with an emergency—whether it's a leaky toilet, a punctured pipe, or a major disaster such as an earthquake.

Again, the first thing to do when your plumbing acts up is to shut off the water supply—at the individual fixture if that's where the problem is, or at the house valve if necessary. If there is no house valve, you should know how to shut off the water at the meter.

The basic tools illustrated in the appendix (pages 36-37) will enable you to perform the simple repair tasks described in this booklet, so it's a good idea to keep a set of tools on hand, along with a supply of washers that fit the faucets in your home.

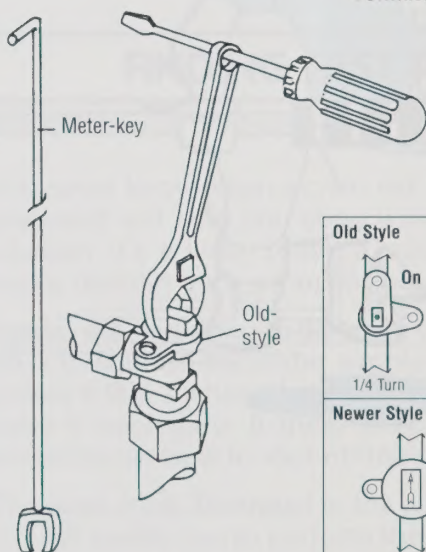
A roll of plastic electrician's tape, a piece of sheet rubber, and some hose clamps will equip you to do temporary repairs on small water pipe leaks. Cover the leaky portion of pipe with tape or a piece of rubber held in place with a clamp as shown below.



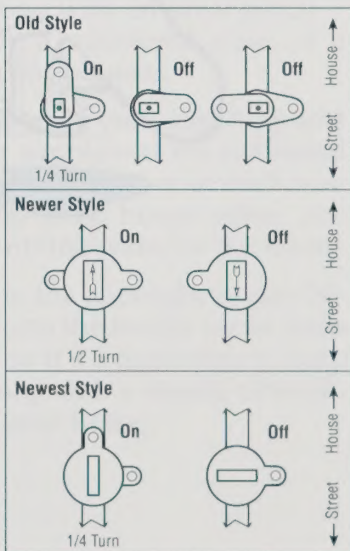
GETTING A "HANDLE" ON WATER EMERGENCIES

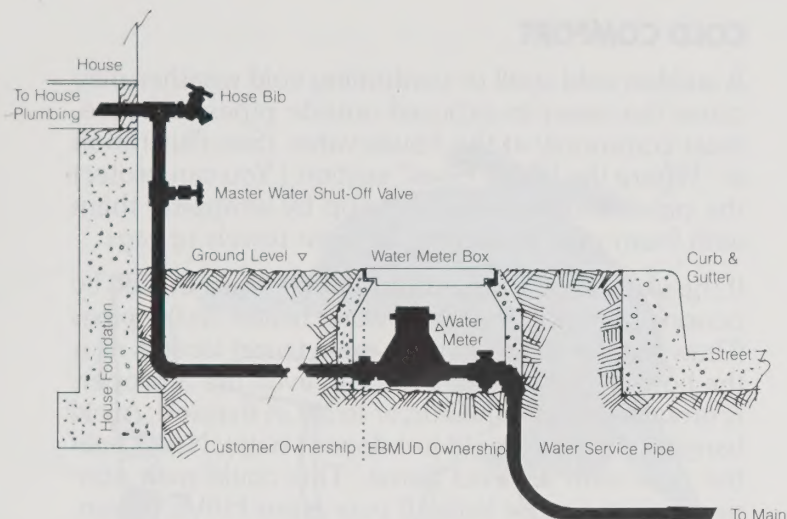
A meter key is a valuable tool. It helps you turn the water off fast, right at the meter, to prevent damage if a pipe bursts anywhere on your side of the meter. Meter keys are available at plumbing supply shops and most hardware stores. You can also turn water on and off at the meter using a large adjustable wrench and screwdriver. Stand the wrench handle straight up and tighten the wrench on the bar across the top of the shutoff valve. Then insert the screwdriver through the wrench handle to use as a turning lever. A quarter-turn of the valve will shut the water off in most cases.

TURNING OFF THE METER VALVE



Meter-turnoff





East Bay Municipal Utility District is equipped to handle emergencies in the public water supply system 24 hours a day. On the back page of this booklet is a list of telephone numbers for EBMUD business offices and emergency service. In addition to responding to water main breaks and gushing hydrants, EBMUD can send a Water Systems Inspector to your home to investigate water quality problems, or a Field Service Representative to determine if a leak in your plumbing is running up your water bill—if you can't locate the problem yourself by using the suggestions that follow. The Water Conservation Office has the latest information and devices for saving water in the home. EBMUD can provide technical advice and information on the installation of approved water pressure regulators. EBMUD also will install backflow prevention devices for homeowners using private wells for irrigation, to prevent any chance of contamination of the drinking water supply.

We cannot, however, repair pipelines or water-using appliances on your property on your side of the meter. That's a job for you and your licensed plumber.

COLD COMFORT

A sudden cold spell or continuing cold weather may cause the water in exposed outside pipes to freeze, most commonly at the house valve. (See illustration in "Where the Water Goes" section.) You can protect the pipes and prevent freeze-up by wrapping them with foam pipe insulation, or even towels or rags.

If the water in the pipes does freeze, thaw the ice by pouring hot water from your water heater on the pipes (Draw the hot water from the drain faucet located near the bottom of the tank.) You can even use a properly grounded electric hair dryer to aid in thawing. Avoid banging on the pipes (it just doesn't help). Never heat the pipe with a direct flame. This could melt connections and cause leaks. If your pipes HAVE frozen, it's a good idea to check for leaks after water flow is restored. Do a meter check (see the next section, "Looking for Leaks") to make sure no underground or hard-to-see piping under the house has broken.



LOOKING FOR LEAKS

If you notice a sudden increase in your water bill, but haven't changed the way you use water, chances are you've sprung a leak. Leaky house plumbing wastes millions of gallons of water a year. Even tiny "pinhole" drips that often go unnoticed add up fast. You can save money and water by repairing some leaks yourself.

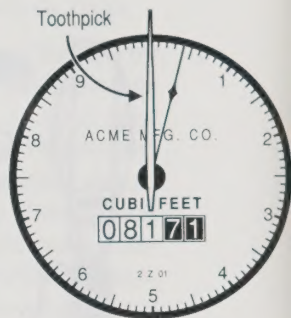
WHERE TO START

It's good preventive maintenance to conduct a leak check of your house once or twice a year. Start by firmly turning off all water faucets, inside and outside the house. If faucet leaks are present, the drips will be obvious. Removing garden and appliance hoses from faucets will make hidden leaks easier to spot.

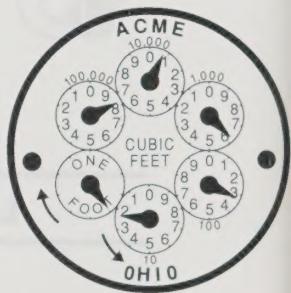
Next, go outside to the meter box, which is usually located in front of the house, near the curb. Locate the hole in the cement cover and carefully lift the cover aside to expose your water meter. Flip open the meter's hinged lid and you'll see one of two types of meter dials used in EBMUD's system—either the straight-reading type (A) or the round-reading type (B). On straight-reading meters, the large needle on the dial is used for testing. On the round-reading type of meter, the dial used for testing either will be labeled “one foot” or will have no marking at all.

With all faucets still shut tightly, mark the direction the test needle points by laying a straight-pin or toothpick exactly on top of it. Then check again a half-hour later. If the test-needle has not moved, no water is flowing through the meter and your house is leak-free. If the needle has moved—and you haven't used any water—you probably do have a leak and will have to do more investigating.

A. Straight-reading



B. Round-reading

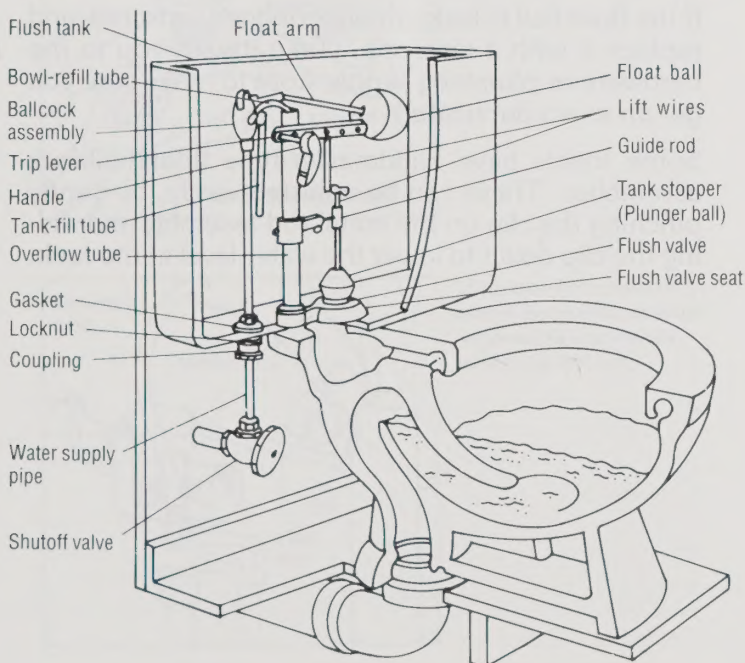


FINDING AND FIXING TOILET LEAKS

Begin by checking the bathroom. Here, the most likely culprit is the toilet. A poorly maintained toilet can waste thousands of gallons of water a day through leakage. (A one-gallon-per-minute leak wastes 1,440 gallons per day.)

If you hear the sound of running water (or faint hissing or trickling) it's obvious your toilet isn't functioning properly and may need repairs. But many times, water flows through the tank silently, which is why toilet leaks are often overlooked. Most commonly, leaks flow silently into the overflow pipe or occur at the plunger-ball or flapper valve (also known as the tank stopper) where a slight amount of scale or corrosion or even a grain of sand can cause leakage.

THE PARTS OF A TOILET



WHAT TO DO

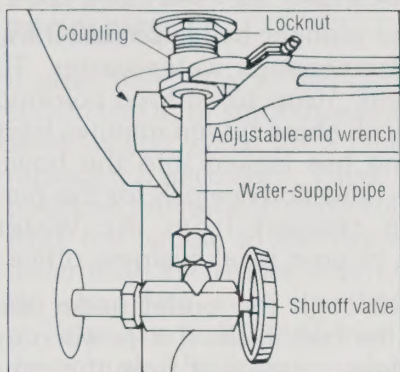
Carefully remove the top of your toilet tank and check the flushing mechanism inside (see drawing on page 13). Make sure the guide rods are not bent out of alignment, preventing other parts from working smoothly. Bent, rusted or corroded parts may need replacement.

Check the surface of the water in the tank and watch to see if water is being wasted through the overflow tube. If it is, you'll have to adjust the water level of the tank. Ideally, the water should remain at least one-half inch below the top of the overflow tube.

The level of water inside the tank is controlled by the level of the float ball. Gently bend the connecting rod attached to the float ball down, or change the float position if it's adjustable, so that the supply valve shuts off when water is at the proper level.

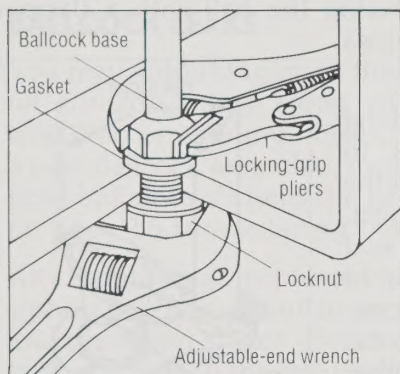
If the float ball is leaky or waterlogged, unscrew and replace it with a new one. (Take it with you to the hardware or plumbing supply store to make sure you get an exact duplicate.)

Some toilets have Fluidmaster-type float/ballcock assemblies. These can be adjusted easily, by gently pinching the clip on the metal rod assembly and sliding the clip down to lower the water level in the tank.

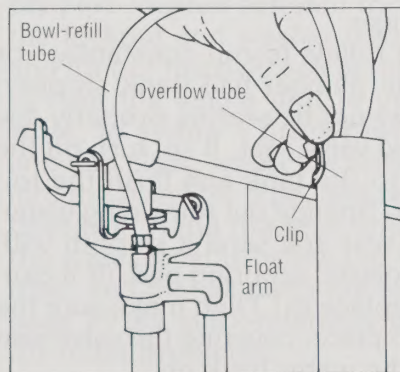


REPLACING THE BALLCOCK ASSEMBLY

1) Disconnect the coupling joining the water supply pipe under the tank to the ballcock. Remove the float arm.



2) Using pliers and a wrench, loosen the locknut holding the ballcock. Unclip the refill tube; remove the ballcock.



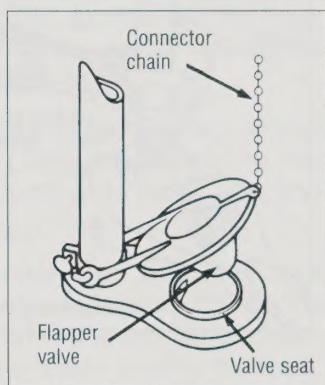
3) To install the new assembly, reverse the removal procedure; reconnect the float arm and reattach the refill tube.

PLUNGER-BALL LEAKS

An improperly seated plunger-ball (also called the tank stopper) is a tremendous water-waster. To detect this type of leak, drop some food coloring into the tank, and check about fifteen minutes later to see if the coloring has leaked into the bowl. EBMUD also has leak detection dye pills for this purpose, available on request from the Water Conservation Office or your local business office.

If water is leaking through the outlet under the plunger-ball, check the ball itself. If it is worn or rough around the edges, unscrew it from the connector wire and get an exact replacement. You might consider replacing the ball with a flapper valve, which requires fewer repairs.

Check with the plumbing or hardware dealer to make sure you can get the right one to fit your toilet. Flappers that do not seat properly waste a lot of water. The chain connecting the handle to the flapper must not be either too long or too short.



Both flapper and plunger-ball leaks can cause toilets to run constantly—or intermittently. If the plunger-ball (tank stopper) isn't worn, it still may not be seating properly due to a scaly or corroded valve seat. If so, turn off the water supply valve to the tank and flush the toilet to empty the tank. Sponge out remaining water. Dry the flush valve seat and sand it smooth with fine emery cloth or plastic scouring pad. (If it cannot be smoothed, replace it.) Then make sure the plunger-ball falls into place, covering the valve seat securely, and turn the water back on.

SOLVING FLAPPER VALVE AND HANDLE PROBLEMS

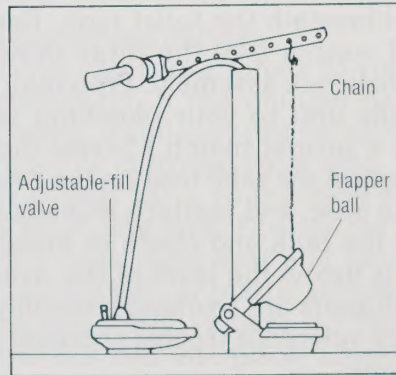
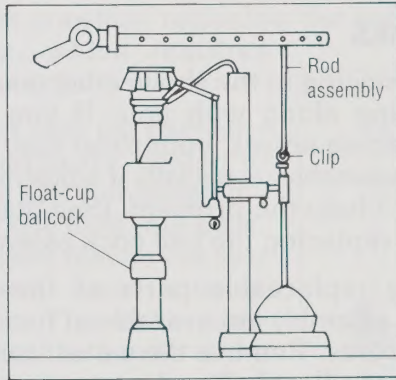
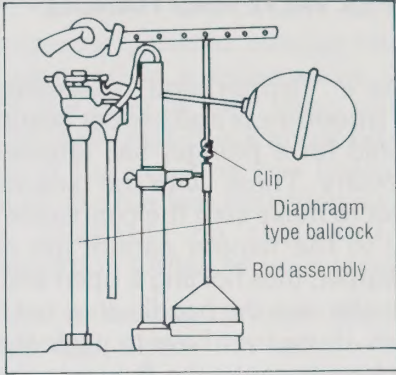
If your toilet has a “flapper-type” assembly, you should test it for smoothness and proper seating the same as you would for a plunger ball (above), and replace it if necessary. Then, (with the tank top off) test-flush the toilet to make sure the connector chain from the handle to the flapper cannot get caught underneath the flapper, thus holding it open and wasting water. Also, make sure the handle does not “hang up” after you flush. If you ever have to jiggle the handle or push it back up to make the flow into the tank shut off, it’s time for repairs.

BALLCOCK LEAKS

You may enjoy singing in the shower, but your toilet shouldn’t sing along with you. If you hear whistling or whining noises, your toilet may need a new ballcock assembly, especially if adjusting the float ball doesn’t help the problem. (See diagram on page 15 for replacing the ball cock assembly.)

Kits containing replaceable parts of the anti-siphon ballcock assembly are available at hardware and plumbing stores. Remove the water from the tank and detach the float ball and connecting arm. Using an adjustable wrench, disconnect the supply pipe located beneath the toilet tank. Remove the locknut and washer (see the three drawings) and lift out the ballcock assembly. (You may want to take the whole unit to your plumbing supply store, to assure a proper match.) Screw the new unit into place, adjust the refill tube on the new unit into the overflow pipe, and reattach and adjust the float ball. Refill the tank and check to make sure the water level is below the level of the overflow tube, and that all parts are working smoothly. On page 19 is a quick-reference trouble-shooting guide for toilet problems.

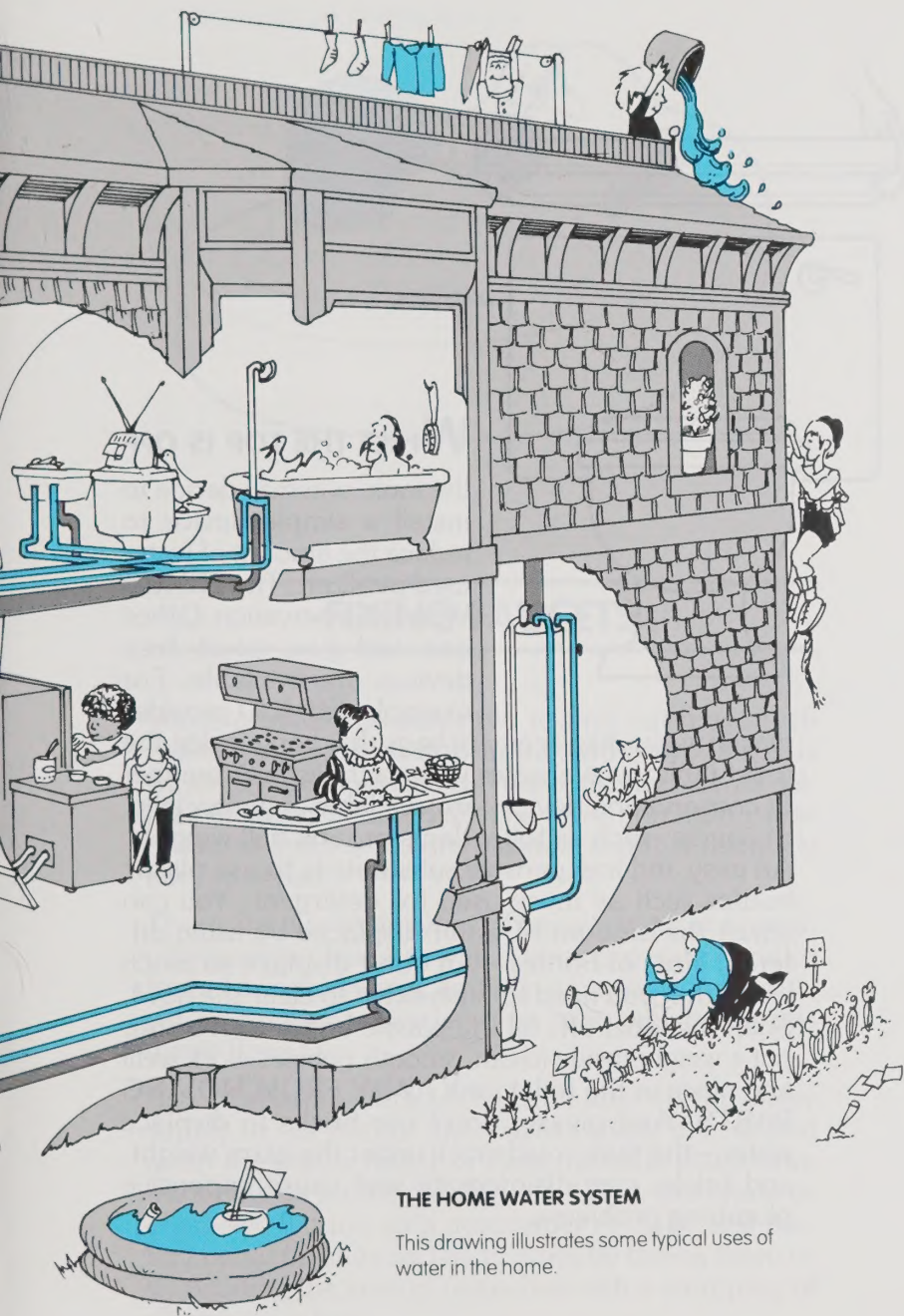
TYPES OF BALLCOCK ASSEMBLIES



Problem	Possible Cause	Remedy
Noisy tank fill	Defective ballcock	Oil trip-lever, replace washers, or install new ballcock assembly (see drawing, page 15)
	Restricted water supply	Adjust shutoff valve
Running toilet	Float arm not rising high enough	Bend arm down or away from tank wall
	Water-filled float ball	Replace float ball
	Tank stopper (flapper valve) not seating properly	Adjust stopper guide rod and lift-wires or chain; replace defective stopper
	Corroded flush valve seat	Scour valve seat smooth, or replace
	Cracked overflow tube	Replace tube or install new flush valve assembly
	Ballcock valve won't shut	Oil trip-lever, replace faulty washers, or install new ballcock assembly

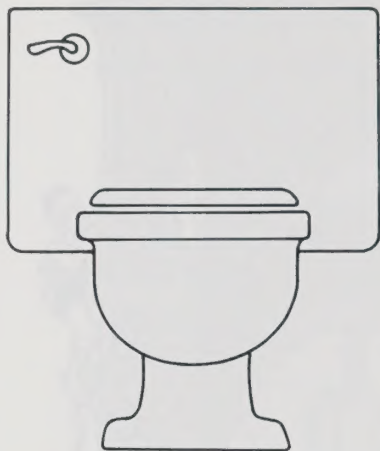
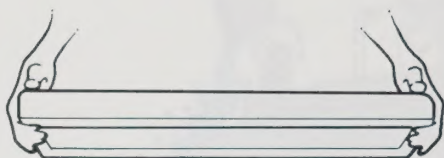
If you have had it “up to here” with first one repair and then another, trying to keep up your old toilet, maybe it’s time to replace the whole unit. All new toilets sold in California use 1.5 gallons per flush or less, in contrast to old-style toilets that use 4 to 5 gallons with each flush.





THE HOME WATER SYSTEM

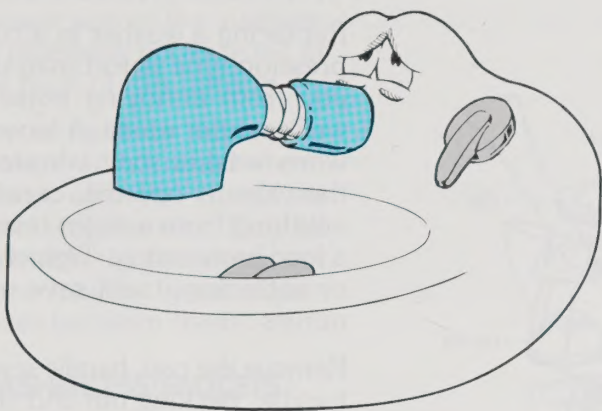
This drawing illustrates some typical uses of water in the home.



WHILE THE TOP IS OFF

the tank, you may decide to install a simple device to reduce the amount of water used per flush. The EBMUD Water Conservation Office can tell you what free devices are available. For example, EBMUD provides

plastic water displacement bags that hang inside the toilet tank to save water with each flush. A number of conservation devices are available commercially, of course, such as toilet dams or tank ball weights. An easy and inexpensive substitute is to use plastic bottles such as those used for detergent. You can adjust the amount of water displaced by using different sizes of bottles—but don't displace so much water that you need to flush twice to clear the bowl. Soak the label off, fill the plastic bottle with water, put a weight inside (clean, smooth pebbles work well) and place in the toilet tank **AWAY FROM MOVING PARTS**. And please, don't use bricks to displace water—the tank could crack under the extra weight, and bricks may disintegrate and cause expensive plumbing problems.



FIXING FAUCETS

You'd probably be surprised to find out how much water that innocent drip in the bathroom faucet is wasting. A pinhole leak can waste as much as 70 gallons of water in one day. The most common cause of faucet leaks is a worn washer, and it is relatively easy to repair.

There are two basic types of faucets in most homes: compression faucets, which have separate handles for hot and cold water, and non-compression faucets, which have only one lever or knob which controls water flow.

Before starting work on faucets, turn off the water supply to the fixture (the valves usually are located under the sink or basin), or close the main house valve if there is no individual shut-off. Cover porcelain or enameled fixtures with newspaper or cloth, and protect metal finishes on faucet parts by taping them or by padding the jaws of wrenches with a wrapping of electrician's tape.

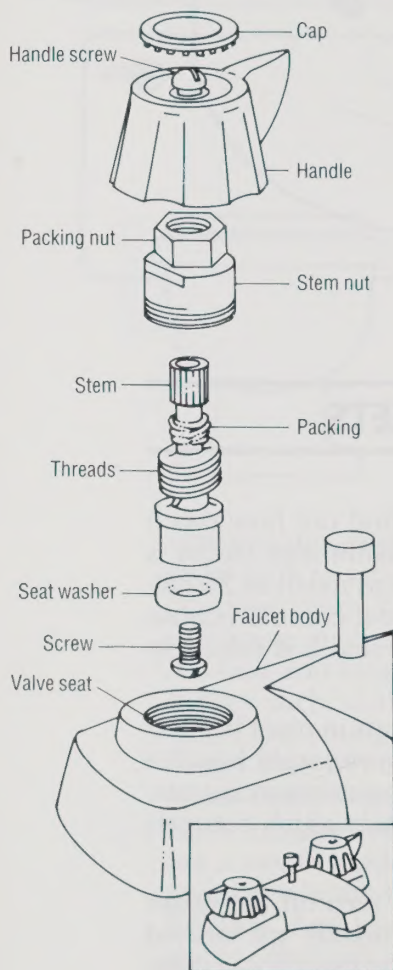
COMPRESSION FAUCETS

Replacing a washer in a compression-type faucet may save you from annoying noise as well as water waste. A loose or worn washer may vibrate as the valve is opened, creating anything from a slight hum to a loud hammering. Tightening or replacing it will save your nerves.

Remove the cap, handle screw, handle, packing nut and stem nut. (See illustration) Unscrew the faucet stem by turning it counter-clockwise, and pull it out. At the end of the stem you'll find a washer held in place by a screw. Take the washer to a plumbing supply store to make sure you get the exact size and shape replacement washer, and a new brass screw if the old one is worn or corroded. Carefully clean corrosion or other debris from the valve seat with a soft cloth or brush.

Then put in the new washer. It should fit easily inside the cup-shaped valve seat, and spread out to the edges when screwed down. Then put the faucet back together. Turn the water on and check to see if you still have a leak. If the dripping persists, the valve seat itself is probably worn and needs replacement. Repairing this and other faucet leaks is more complicated, but can be done with the proper tools. For

COMPRESSION FAUCET

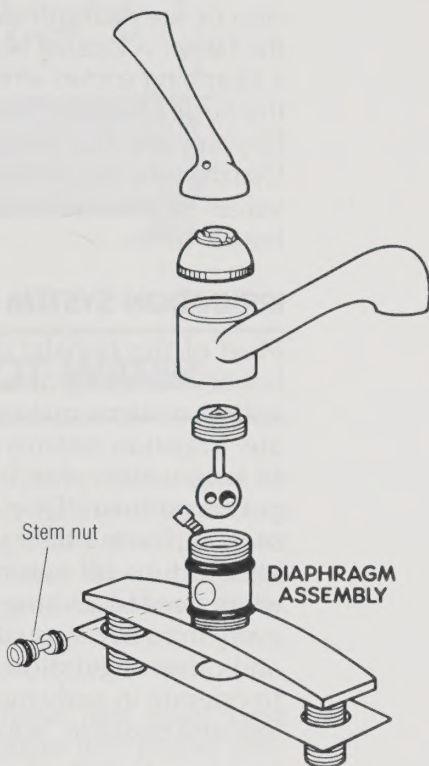


more detailed information, consult one of the suggested plumbing books listed in the back of this booklet.

If you have to replace a broken or corroded stem, take it with you to get an exact replacement. They all look alike in the store, but there may be great differences between them.

WASHERLESS FAUCETS

Some compression faucets are a washerless type, which use a metal disc or a rubber diaphragm to control the flow of water. To fix a leak in a washerless faucet, follow the steps described for taking apart a regular compression faucet, removing the entire diaphragm assembly after unscrewing the stem nut. Take the assembly to a plumbing supply store to get a matching repair kit, replace all faulty parts and reassemble the faucet.



NON-COMPRESSION FAUCETS

These faucets control the flow of water with one lever or knob. Leaks in most of them may be repaired by taking the faucet apart and replacing the mechanism with a replacement cartridge rather than individual replacement parts.

For more detailed information on the repair of non-compression faucets, consult one of the books listed (on page 39.)

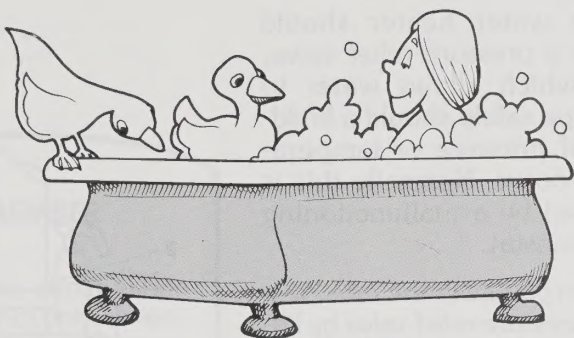
TUB AND SHOWER FAUCETS

Tub and shower faucets can be either the compression or non-compression type. Many times most of the faucet is located behind the wall and you will need a plumbing socket wrench (see appendix) to unscrew the large “bonnet” nut in order to remove the stem. Repairs are the same as for similar sink faucets. Usually tubs and showers do not have handy shut-off valves, so you will need to turn water off at the main house valve.

IRRIGATION SYSTEM TROUBLE-SHOOTING

Most of this booklet deals with problems inside the house. But the growing popularity of automatic irrigation systems makes some outdoor tips appropriate. Irrigation systems on automatic timers—designed to save water—can actually waste water if we forget about them. Don't forget to adjust them for the season. During the rainy winter months, it's a good idea to turn off automatic systems, and water only when needed. During the summer months, watering every third day is usually sufficient to keep most lawns and other vegetation healthy. It's best to set timers to operate in early morning, to prevent evaporation loss and possible “sunburn” damage to some plants.

You can check for leaks in your irrigation system by doing a “needle” test on your water meter (see “Looking for Leaks.”) If nothing else seems to be leaking, but the test-needle in your meter is still moving, you should suspect your automated watering system. Turn it off at its own main valve—making sure no other water is being used—and if the needle only then stops moving, the automated system probably has a leak. Also, don't forget simple visual checks, such as looking for standing water, dripping sprinkler-heads, or brighter-green patches near hose bibs or sprinkler heads.



STAYING IN HOT WATER

Hot water is a simple luxury that is often taken for granted—until the water heater fails when you're in the middle of a shower. Knowing a little about the water heater will help you troubleshoot when problems occur—and could prevent a mess in a real emergency.

HEATER MAINTENANCE

Water heaters don't last forever, but most have approximately fifteen-year life spans with proper care, which includes routine check-ups.

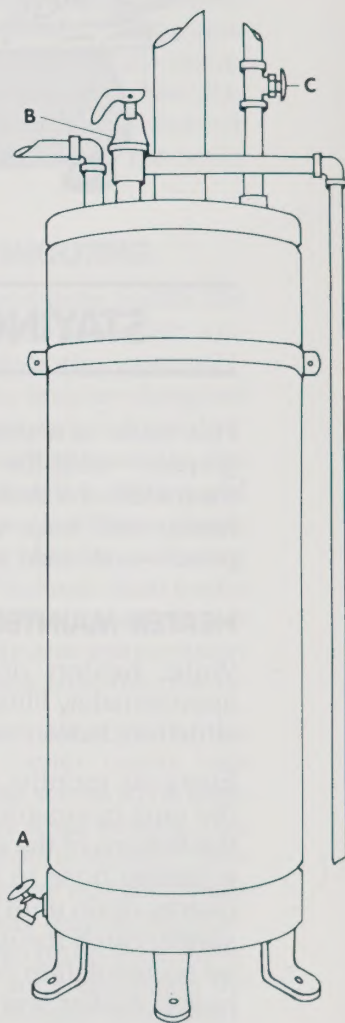
Every six months, drain a few quarts of water from the tank by opening the faucet-like drain valve (A) at the bottom of the tank (see diagram page 28). Attach a garden hose to the valve and flush water down a nearby drain until it runs clear. If this is not possible, simply catch the water in a bucket. This will prevent an accumulation of sediment, and you may find your heater makes less noise.

Your water heater should have a pressure-relief valve, (B) which allows water to escape safely should a build-up of pressure or temperature occur. Normally this is caused by a malfunctioning thermostat.

When you flush the tank, test the pressure-relief valve by lifting the test lever on the top of the valve. A little water may leak out; that means it is functioning properly.

Also check the turn-off valve to make sure it is operating smoothly. It is usually located on the cold water inlet line to the heater (C). You may need to shut off water quickly in case of an emergency. It is also a good idea to know where the shut-off valves for the gas or electric heating supply are located; usually near the thermostat.

If you notice a puddle of water around the bottom of the tank, it probably has a leak caused by corrosion—a sure sign of old age, and the most common reason for replacing the tank. Most likely, if the tank wall is corroded in one place, it is only a matter of time before other leaks appear. It's time to retire your tank and get a new one; look for an energy-saving model this time.



REMEMBER

Remember, conserving hot water not only saves water, but the energy used to heat it. Think about the ways you use hot water, and find a way to use less. Load your dishwasher fully before running it, and scrape plates before loading instead of rinsing them. Install water-saving showerheads (available from EBMUD) and flow-reducing faucet aerators. Check garments to see if they can be laundered in cold water, and make each washerload a full one. Investing in an insulating blanket for your water heater can save substantially on fuel costs. Insulate hot water pipes, too, for a little more energy saving.

Inspect the burner of a gas-fired heater regularly to make sure it is free of dust and sediment. And whether your heater is gas or electric, try setting the thermostat at 125 degrees Fahrenheit. The lower temperature will save energy and wear and tear on the equipment—since hot water is more corrosive to pipes—and will protect small children from accidental scalding. Another important safety note: Be sure your water heater is attached securely to the wall or the pedestal—or BOTH—to prevent toppling and fire in an earthquake. If it is gas-fired, be sure it has a flexible gas line.



MAINTAINING WATER QUALITY

FROM THE SOURCE

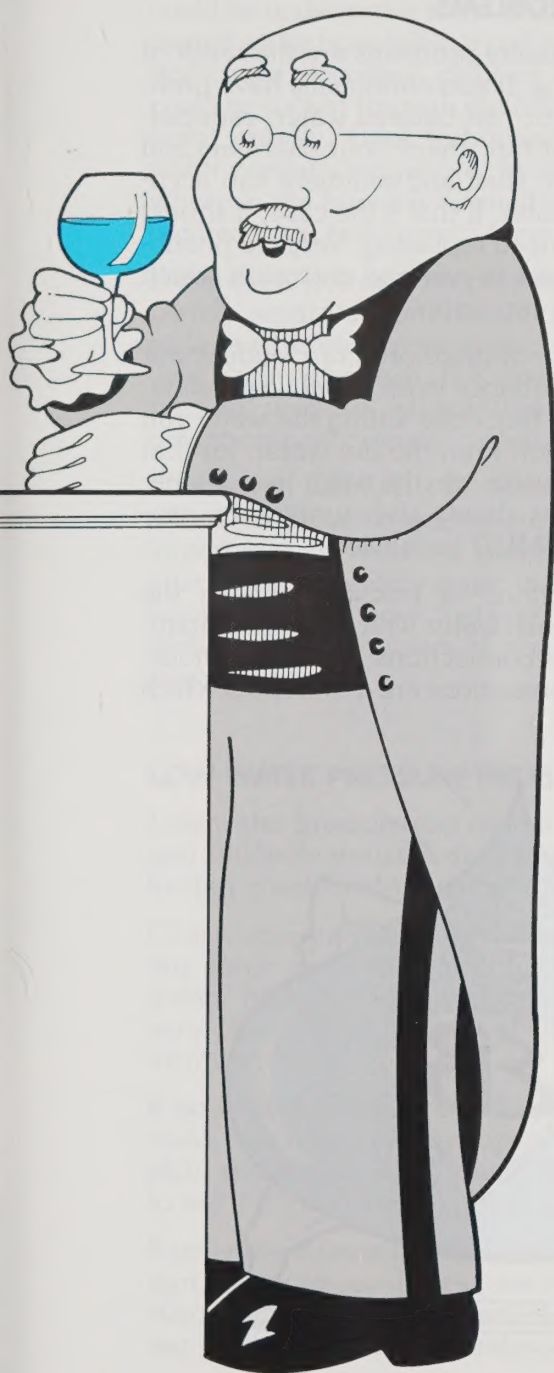
Most of the water you get from EBMUD starts out as snow on the slopes of the Sierra Nevada. This supply is naturally “soft” and low in organic matter and dissolved minerals. It is transported to the East Bay in enclosed pipelines, and every drop is filtered before it reaches your tap.

We make sure the water we deliver is pure—and there are some things you can do to keep it that way once it flows through your meter.

WHAT'S IN THE WATER?

Since EBMUD starts with a clean water supply, very little treatment is needed to turn it into drinking water. In addition to filtering it, several other processes and chemicals are used to ensure a clear and healthful product.

Coagulants are added to consolidate dirt particles, and then removed by filtering. Lime or soda ash is added to protect pipelines from corrosion. Chloramine (and in some cases ozone) is used for disinfection. As a result of a public election in 1974, fluoride also is added to EBMUD water.



DO YOU NEED A HOME FILTER SYSTEM?

Public concern with the safety of water supplies has increased the sales of home water quality units, such as filters and softeners.

The water delivered by EBMUD is soft and completely filtered before it reaches your home, and high standards of water purity are maintained through frequent chemical and bacteriological analyses. Additional treatment devices are not necessary. If you should experience water quality problems such as an "off" taste or odor, or the presence of sediment or other foreign matter, call the EBMUD Water System Inspection section at 287-1122. An inspector will respond to your complaint, and may take a sample of your water to determine the cause of the problem. Often the problem can be traced to the household plumbing itself.

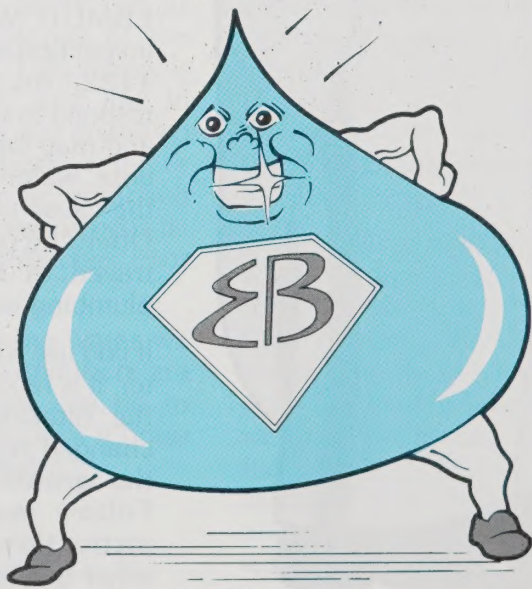
If you use a home water filter, it is recommended that the filtering material be changed regularly to limit the growth of bacteria. Follow manufacturer's instructions to prevent other quality problems.

WATER QUALITY PROBLEMS

Many home water quality problems are the result of old or faulty plumbing. If you continually have problems with sediment or rust-colored water, especially from the hot water tap, check your plumbing and the hot water heater. Rust and sediment can accumulate in a water heater. If that's the case, it should be flushed and may need replacing. Very old plumbing also can be subject to rust and corrosion which will show up in your tap water.

A sudden occurrence of discolored or cloudy water may be due to a disturbance in an EBMUD pipeline. Flush the front hose faucet by letting the water run for a few minutes. Don't run the hot water, for that will draw the cloudy water into the water heater tank. If the water still looks cloudy after running for several minutes, call EBMUD for advice.

Avoid cross-connections—a linkage between the house supply and wastewater which could contaminate it. Many cross-connections are not obvious. Examples of cross-connections are a sink spout which



could be under water if the sink backed up, or a connected water hose left in a pail or laundry tub. If back-siphonage occurred, dirty or contaminated water could be sucked through the fixture and into the fresh water supply. Back-siphonage can happen when water pressure drops—for instance, if a faucet elsewhere in the house is opened wide. Look for cross-connections, and correct them as soon as possible.

If there is a well on your premises, it should be completely separate from household plumbing, and by state law, it must be equipped with a device to prevent back-siphonage. It is possible for a cross-connected well to affect water quality in your neighborhood or even farther.

Check with EBMUD's Backflow Prevention Unit for advice on preventing cross-connections, and on the importance of backflow prevention devices. In the interest of preventing water quality and health problems, EBMUD now installs backflow prevention devices free for owners of single-family homes with private wells.

LOW WATER PRESSURE PROBLEMS

Low water pressure can have a number of causes. If you suddenly notice a drop in pressure, try the following checks before calling EBMUD:

Check water usage inside and outside the house. Are any large appliances running? Are the sprinklers going? Many homes experience a drop in water pressure when a large amount of water is flowing to one location.

If no water is being used, check your house valve to make sure it's all the way open. (Children sometimes play with these.) Then check the valve at the meter to see if it's in full-open position.

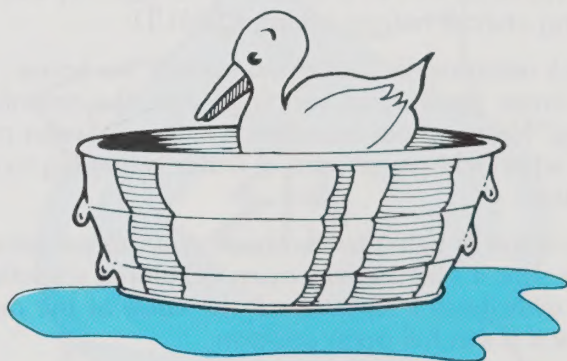
If you have a pressure regulator or softener/filter system, check to see if these are functioning properly. Also check the meter to see if the test-dial is moving. With all faucets off and no appliances running,

a moving dial may indicate a leak or break in your houseline serious enough to cause a drop in pressure.

Is low pressure limited to one faucet or sink? Most faucets have filter screens to keep small sediment particles from coming out with the tap water. The screens can become clogged. If there is a screen, simply unscrew the ring holding it in place and clean and reinstall the screen.

If the pressure limitation is confined to one side—either hot or cold—a bad valve may be to blame. Problems on the hot side only? Check the inlet and outlet valves at the water heater to be sure they are fully open. Also check the water heater for sediment buildup. A plumber can replace bad valves. If none of the likeliest causes check out, the plumber can also deal with the possibility of a badly clogged house line.

Remember, whenever possible, make the initial checks yourself. These can save unnecessary plumbing costs and help EBMUD save time in correcting pressure problems. If none of your checks locates the problem, ask neighbors if they're having the same experience. This information will help the EBMUD Water System Inspectors.



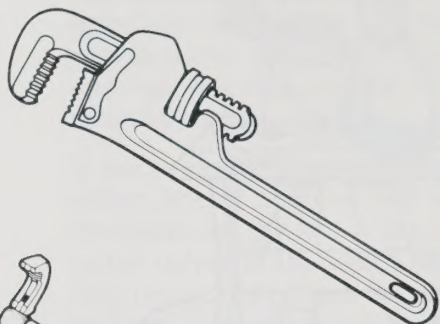


AN EMERGENCY WATER SUPPLY

In a severe emergency, such as an earthquake, water service may be interrupted, and it could be necessary to find an alternate supply. The water stored in a water heater is a source of potable water, and that's a good reason to secure the tank so it won't topple in a quake. Water also may be stored in clean, tightly capped containers. Change the stored water every few months.

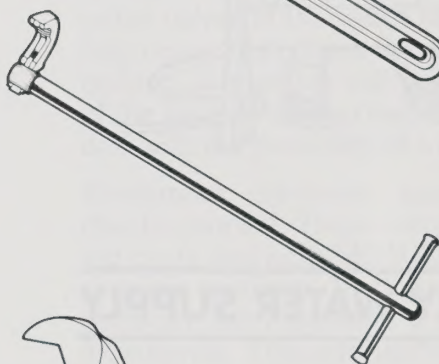
An emergency water supply which you suspect of bacterial contamination may be purified in several ways. It can be boiled for at least five minutes, or treated with water purification tablets available at drug and sporting goods stores. Household liquid chlorine bleach may be used if only sodium hypochlorite is listed as the active ingredient. Add eight drops per gallon of clear water, and let stand for half an hour before using.

APPENDIX



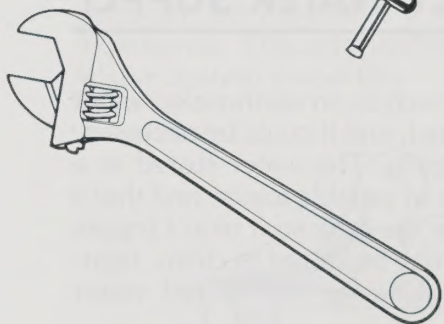
PIPE WRENCH

A heavy-duty tool for repairs on large fittings and pipe.



BASIN WRENCH

Use this for hard-to-reach places, such as under the sink.



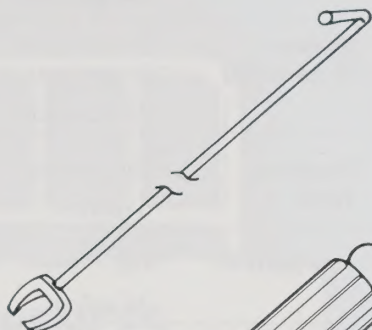
ADJUSTABLE (CRESCENT) WRENCH

Available in a variety of sizes for loosening and tightening nuts on faucets.

APPENDIX

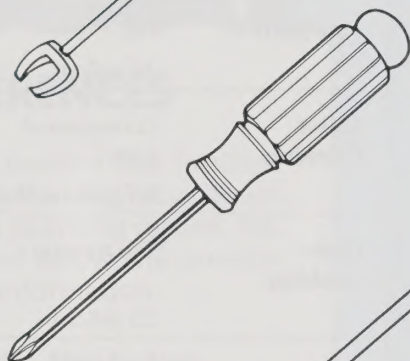
METER KEY

Prevent flood damage by using this invaluable tool. It lets you shut off all water at the meter, in one motion.



PHILLIPS SCREWDRIVER

Use on screws with "x"-topped heads. Add it to your collection of regular flatblade screwdrivers.



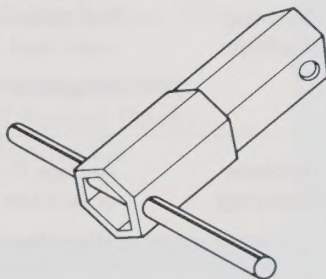
RUBBER PLUNGER

Also known as a "plumber's friend". Unstop clogged drains by covering drain with the rubber end, using an up-and-down motion until the drain flows freely.



PLUMBING SOCKET WRENCH

Use to remove the "bonnet nut" on shower or tub faucets. An adjustable or pipe wrench may be fitted to the tool and used as a handle, if necessary.



Water Conservation Tips

	Normal Use	Conservation Use
Shower (5 minutes)	Conventional showerhead 25-35 gallons	Water-saving showerhead 10 gallons
Brushing Teeth	Tap running 5 gallons	Wet brush, rinse briefly 1/4 gal or less
Tub Bath	Full 36 gallons	Minimal water level 10-12 gallons
Toilet Flushing	Conventional toilet 5-7 gallons/flush	Using an ultra-low- flow toilet 1-6 gallons/flush
Dish- washing	Tap running 25 gallons	Wash & rinse in dishpans or sink 5 gallons
Automatic Dishwasher	Full cycle 9-12 gallons	Short cycle 7 gallons
Shaving	Tap running 20 gallons	Full basin 1 gallon
Washing Hands	Tap running 2 gallons	Full basin 1 gallon
Washing Machine	Full cycle, top water level 60 gallons	Short cycle, minimal water level: 27 gal. Front-loading: 35 gal.
Outdoor Watering	Average hose or sprinkler system 10 gal/min.	Water deeply, infrequently and only when plants need it.



REFERENCES

If reading this booklet has fortified your interest for learning more about doing your own plumbing repairs, the books suggested below will provide more detailed information.

PLUMBING – Step by Step

Better Homes and Garden
Copyright 1997, Meredith Corp.

HOME PLUMBING PROJECTS and REPAIRS

Black and Decker Home
Improvement Library, 1990

BASIC PLUMBING with Illustrations

Howard C. Massey, Second edition 1994

BASIC PLUMBING ILLUSTRATED

by the editors of Sunset Books,
Lane Publishing Co.



EMERGENCY NUMBERS

PLUMBER

HARDWARE STORE

PLUMBING SUPPLY

EBMUD OAKLAND • 375-11TH ST.

1-866-403-2683
